

Amendments of the Specification:

Please replace the Abstract with the following Abstract:

ABSTRACT OF THE DISCLOSURE

An active pixel sensor is disclosed. In one embodiment, a solid state radiation detection unit may be fabricated using a semiconductor substrate having a plurality of CMOS pixel circuits incorporated into the substrate. Typically, each of an array of pixel circuits includes within each circuit a charge collecting pixel electrode, a charge sensing node, a gate bias transistor for separating the charge collecting pixel electrode and the charge sensing node and for maintaining the pixel electrodes at substantially equal potential, and a pixel capacitor to store charges collected by the charge collecting pixel electrodes. A charge measuring circuit comprising at least one transistor may also be configured with each pixel circuit. The sensor may further include a radiation absorbing layer comprised of photoconductive material, as well as a surface electrode layer comprised of electrically conducting material. The sensor is typically configured with an array measurement circuit for measuring charges collected by the array of charge collecting pixel electrodes and for pixel data output.